Control Equipment Limited
Precept^{en} Output Expansion Module
Installation & Commissioning Manual

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1. Introduction

Thank you for purchasing the Precept[en] conventional fire detection and alarm equipment. The Precept[en] range of panels have been designed to meet the requirements of BSEN 54 Parts 2 & 4 and will provide the user with many years of reliable service.

This document contains all the information necessary for the installation, commissioning and maintenance of the Precept[en] range of output expansion panels. Installation and commissioning details for Precept[en] fire detection and alarm panels are covered in the Precept[en] manuals mentioned below.

NOTE: It is important to read this manual fully <u>before</u> commencing installation.

The following supporting documentation is also available:

- Precept[en] Output Expansion System Application Guide
- Precept[en] Sales Literature
- Precept[en] Panel Application Guide
- Precept[en] User Manual
- Wiring Recommendations

2. Overview of Installation and Commissioning

This section lists the steps that are taken in installing and commissioning a Precept[en] output expansion system.

1. **Install all field wiring and equipment**
   - Refer to the Installation Guidelines in section 6.2 below
   - Refer to the field device installation manuals
2. **Install the panel**
   - Refer to the installation instructions in section 6.2 below
   - Do not connect the field equipment at this stage.
3. **Commission the panel**
   - Refer to section 6.

3. Power Supplies

The Precept[en] 8 fire alarm panel utilises the standard 230Vac 3A PSU fitted to the C1627 motherboard. The Precept[en] 16 Exp fire alarm panel uses the C1652 230Vac 5A PSU mounted on the internal chassis beneath the motherboard/output modules. Precept[en] Exp 4 and 5 output expansion panels are supplied with or without a C1652 230Vac 5A PSU depending on the output load requirement. When fitted, the PSU is located on the chassis underneath the output modules.

For all panels, the output voltage is adjustable from 25V to 28.2V via a small trimmer potentiometer on the PCB. As the output voltage is factory set however, adjustment should not be necessary.

Details of the PSUs can be found in the Precept[en] manuals [Prec en inst.doc, Prec en app.doc]

4. Precept[en] – Internal Panel Views

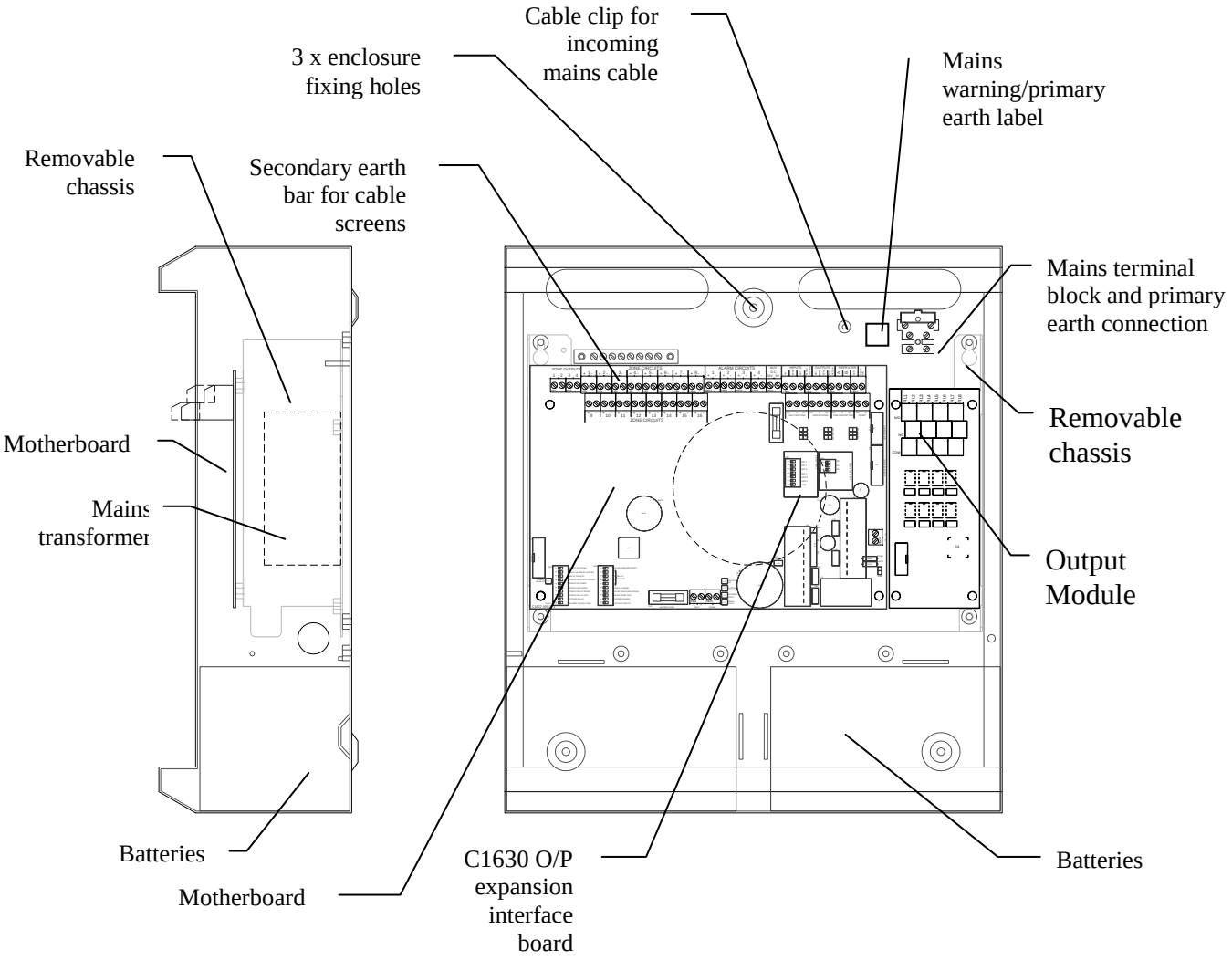


Figure 1 – Precept[en] 16 internal view showing optional single O/P board

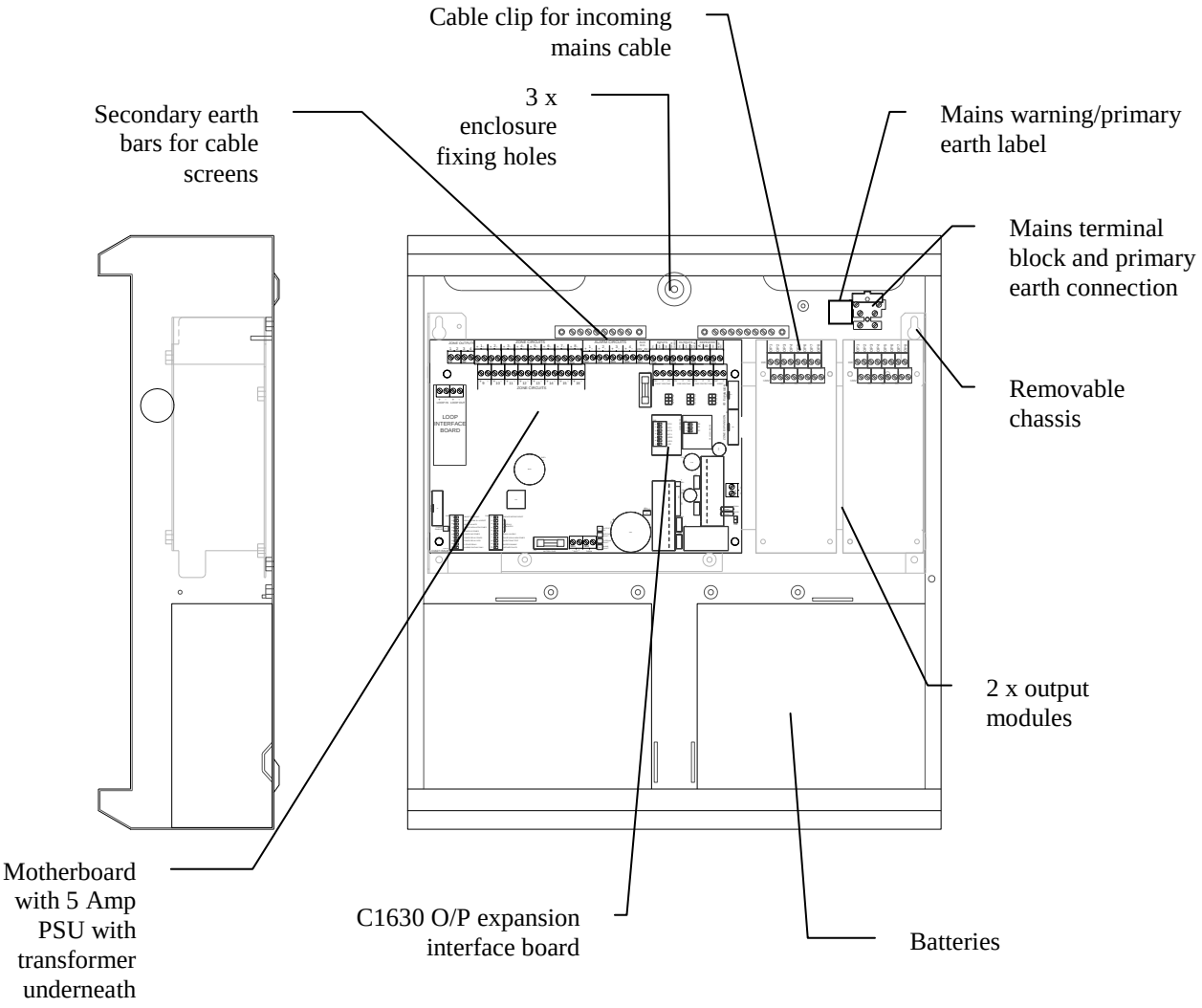

Cable clip for incoming mains cable
3 x enclosure fixing holes
Secondary earth bars for cable screens
Mains warning/primary earth label
Mains terminal block and primary earth connection
Removable chassis
2 x output modules
Motherboard with 5 Amp PSU with transformer underneath
C1630 O/P expansion interface board
Batteries

Figure 2 - Precept[en] 16 Exp internal view [32 zone enclosure] with two Output boards

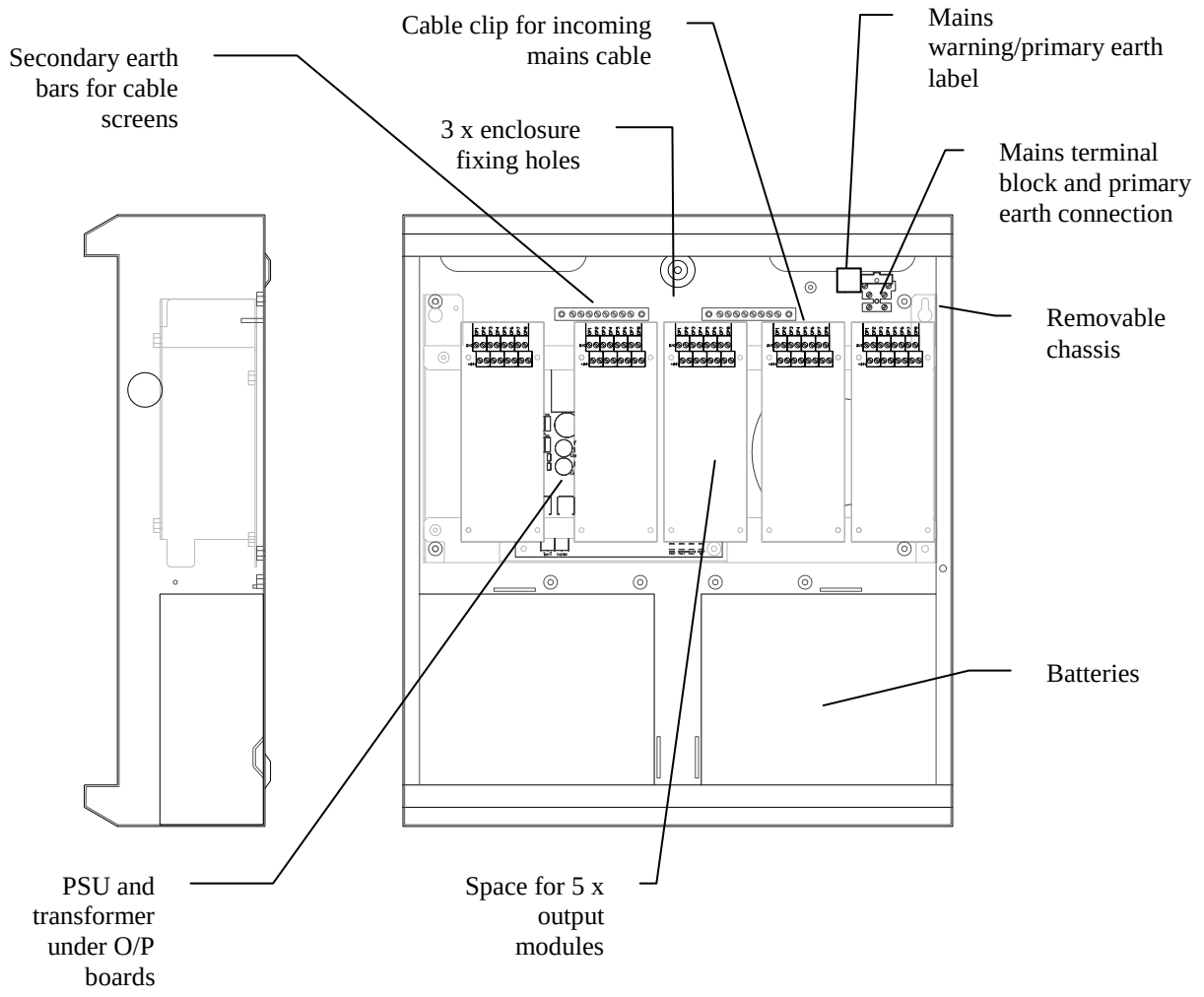

Secondary earth bars for cable screens
Cable clip for incoming mains cable
Mains warning/primary earth label
3 x enclosure fixing holes
Mains terminal block and primary earth connection
Removable chassis
Batteries
PSU and transformer under O/P boards
Space for 5 x output modules

Figure 3 – Precept[en] Exp 5 internal view

5. Output Module Field Wiring/Terminal Diagrams

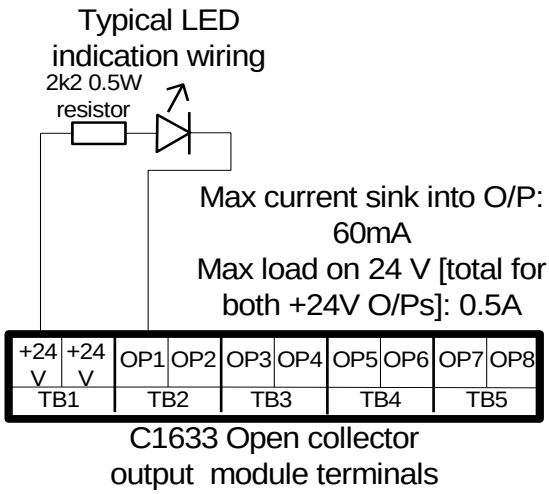


Figure 4 - C1633 Field Wiring Connections

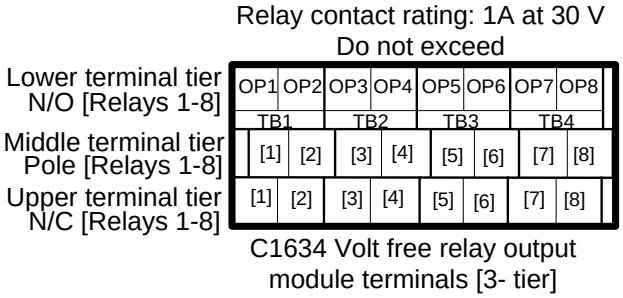


Figure 5 - C1634 Field Wiring Connections

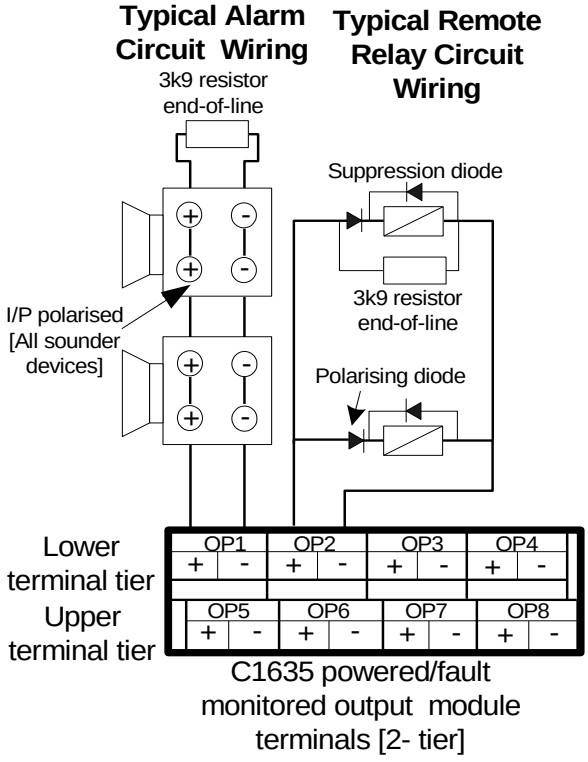


Figure 6 - C1635 Field Wiring Connections

6. Installation

The panel must be installed by suitably qualified engineers familiar with the installation of fire detection systems. In addition, it is recommended to refer to the following information:

- Current edition of the IEE wiring regulations.
- Current edition of BS5839-1 or the installation standards for the relevant country.
- Any specific site requirements.
- Any field device installation instructions.
- Any data sheet provided for the installation of Intrinsically Safe devices.

Notes:

The rating plate, containing essential electrical information is located inside the panel on the inside face of the door.

Any mains supply cable should be a minimum of 1mm^2 copper protected by a 5A fuse and must include an appropriate lockable double pole disconnect device as part of the building installation. This device must have a minimum contact gap of 3mm.

6.1 Electrical Safety

WARNING: Read this section completely before commencing installation.

Prior to commencing installation of the panel, ensure that adequate precautions are taken to prevent damage to the sensitive electronic components on the PCBs due to electrostatic discharge. You should discharge any static electricity you may have accumulated by touching a convenient earthed object such as an unpainted copper radiator pipe. You should repeat the process at regular intervals during the installation process, especially if you are required to walk over carpets.

The panel must be located in a clean, dry position, which is not subject to shock or vibration and at least 2 metres away from pager systems or any other radio transmitting equipment. The operating temperature range is -5ºC to 40ºC; maximum humidity is 95%.

Precept^{en} Exp 4 and Precept^{en} Exp 5 Output Expansion panels must be located immediately adjacent to the fire alarm panel.

IMPORTANT NOTES ON BATTERIES [when fitted]:

DANGER: Batteries are electrically live at all times, take great care never to short circuit the battery terminals.

WARNING: Batteries are often heavy; take great care when lifting and transporting batteries. For weights above 24 kilos, lifting aids should be used.

DANGER: Do NOT attempt to remove the battery lid or tamper with the internal workings of the battery. Electrolyte is a highly corrosive substance, and presents significant danger to yourself and to anything else it touches. In case of accidental skin or eye contact, flush the affected area with plenty of clean, fresh water and seek immediate medical attention.

Valve Regulated Lead Acid (VRLA) batteries are "low maintenance", requiring no electrolyte top-up or measurement of specific gravity.

WARNING: Only clean the battery case with a cloth that has been soaked or dampened with distilled water. Do not use organic solvents (such as petrol, paint thinner, benzene or mineral spirits) or other materials that can substantially weaken the case. Do not use a dry cloth as this will generate static electricity, which in turn may lead to an explosion.

WARNING: Avoid operating temperatures outside the range of -15°C/5°F to +50°C/122°F for float/standby applications.

The recommended normal operating temperature is 20°C.

HIGH TEMPERATURE will reduce battery service life. In extreme cases this can cause Thermal Runaway, resulting in high oxygen/hydrogen gas production and battery swelling. Batteries are irrecoverable from this condition and should be replaced.

LOW TEMPERATURE will prolong battery life but reduce output capacity.

DANGER: Do not incinerate batteries. If placed in a fire, the batteries may rupture,

with the potential to release hazardous gases and electrolyte. VRLA batteries contain substances harmful to the environment.

Exhausted batteries must be recycled. Return them to the battery manufacturer or take them to your Council waste disposal site for appropriate disposal.

ELECTRICAL SAFETY:

The volt-free relay contacts provided within the panel must not be used to directly switch any voltage that exceeds 50VAC or 75VDC. (Please also refer to relay rating data).

Equipment requiring a 230V AC supply. [See Rating Plate inside equipment. See also 1. above.] All installation work should be carried out in accordance with the recommendations of BS5839 Part 1 and the current edition of the IEE regulations by suitably qualified and trained personnel.

THIS PANEL MUST BE EARTHED

6.2 Installation Instructions

The flexibility of the Precept[en] Output Expansion System allows many different combinations of enclosure/PSU/output modules. As such these instructions cannot cover every single variation and so provide general instructions only.

1. Carefully remove the panel from the packing and lay the panel on a flat surface.
2. Open the door of the panel.
3. Locate the spares bag[s] and check contents, which should comply with Table 1 – Panel Spares Bag Contents.

6.2.1 Precept[en] 16 Exp Panel Installation Instructions

See Precept en panel installation manual – [Prec en inst.doc]

6.2.2 Precept[en] 4 and 5 Exp Expansion Enclosures

Matching 25mm knock-outs are provided on the right hand face of the Precept[en] 8/16 fire alarm panel enclosure and the left hand face of the Precept[en] 4 Exp output expansion enclosure to allow the panels to be coupled together with the expansion panel on the right. A similar arrangement is provided for connecting Precept[en] 32 control panels to the Precept[en] 5 Expansion enclosure.

Mount and fix the fire alarm panel enclosure in accordance with the instructions provided in the Precept[en] panel installation manual – [Prec en inst].

After fitting the fire alarm control panel, remove the chassis from the output expansion panel generally as described in the Precept[en] panel installation manual – [Prec en inst], carefully remove the 25mm knock-outs in the adjoining faces of both fire panel and expansion enclosures [by knocking out from the inside of the enclosure to the outside] and fit a 25mm coupler to one panel. Offer up the expansion box, aligning the two enclosures via the coupler then mark. Fix the expansion enclosure to the wall as described in the Precept[en] panel installation manual – [Prec en inst]. Tighten up the coupler. Continue to install in accordance with the relevant guidelines provided in the Precept[en] panel installation manual – Prec en inst] as appropriate to the output expansion module system provided.

Table 1 – Panel Spares Bag Contents

<table>
<tr><th rowspan="3">Panel</th><th colspan="3">Spares Bag</th></tr>
<tr><th colspan="2" rowspan="2">Panel</th><th colspan="3">Expansion Modules [as fitted]</th></tr>
<tr><th>C1633</th><th>C1634</th><th>C1635
[1 x bag/module]</th></tr>
<tr><td>Precept[en] 8/16 panel with optional O/P module</td><td colspan="2">See Precept[en] installation and commissioning manual.
[Prec en inst]</td><td>None required</td><td>None required</td><td>8 x 3k9 0.25W</td></tr>
<tr><td>Precept[en] 8/16 Exp</td><td colspan="2">See Precept[en] installation and commissioning manual.
[Prec en inst]</td><td>None required</td><td>None required</td><td>8 x 3k9 0.25W</td></tr>
<tr><td>Exp 4 or 5
[no PSU]</td><td colspan="2">Engineer’s door keys. Key Ref.: 801 [Flat key type]</td><td>None required</td><td>None required</td><td>8 x 3k9 0.25W</td></tr>
<tr><td rowspan="6">Exp 4 or 5
[C1652 PSU]</td><td>Mains Fuse:</td><td>T3.15AH250V 20mm</td><td rowspan="6">None required</td><td rowspan="6">None required</td><td rowspan="6">8 x 3k9 0.25W</td></tr>
<tr><td>Battery Fuse:</td><td>F6.3AL250V 20mm</td></tr>
<tr><td>Engineer’s door keys:</td><td>Key Ref.: 801 [Flat key type]</td></tr>
<tr><td>Positive battery lead:</td><td>Red</td></tr>
<tr><td>Negative battery lead:</td><td>Black</td></tr>
<tr><td>Battery coupling lead:</td><td>Blue</td></tr>
</table>

6.2.3 Interconnections between Fire Alarm Panel and Output Modules

The standard output expansion panel combinations are listed below [see Table 2] along with their respective requirements for interconnection for the 3 types of O/P modules.

Table 2 - Fire Panel/Output Module Interconnection Installation Work

Fire Alarm Control Panel		Expansion Panel	Internal Connections			Schematic
Description	**Internal O/P Modules**	**Description**	**Internal Cable**	**In Precept[en] Panel**	**In Expansion Panel**	
Precept[en] 8 Precept[en] 16	No	Exp 4 [or Exp5] no power supply.	Data Ribbon	Fire panel motherboard [C1627] connector J17.	Connector J2 on O/P module 1[left hand most module]	Figure 13
			Aux DC power cable	Fire panel motherboard [C1627] power out connector J24	"Power in" connector on the first C1633/C1635 module [from the left hand side of the expansion panel]. J4 on the C1633/J3 on the C1635.	
Precept[en] 32	No	Exp 4 [or Exp5] no power supply.	Data Ribbon	Fire panel motherboard [C1627] connector J17.	Connector J2 on O/P module 1[left hand most module]	Figure 15
			Aux DC power cable	Fire panel motherboard [C1627] power out connector J24	"Power in" connector on the first C1633/C1635 module [from the left hand side of the expansion panel]. J4 on the C1633/J3 on the C1635.	
Precept[en] 8 Precept[en] 16 Precept[en] 32	No	Exp 4 [or Exp5] with C1652 power supply.	Data Ribbon	Fire panel motherboard [C1627] connector J17.	Connector J2 on O/P module 1[left hand most module]	Figure 14
			Aux DC power cable		Factory fitted. From: C1652 power supply board 28V, 0V and fault signals from J1. To: "Power in" connector on the first C1633/C1635 module [from the left hand side of the expansion panel]. J4 on the C1633/J3 on the C1635.	

Fire Alarm Control Panel		Expansion Panel	Internal Connections			Schematic
Description	**Internal O/P Modules**	**Description**	**Internal Cable**	**In Precept[en] Panel**	**In Expansion Panel**	
Precept[en] 8 with a single O/P module	1	Exp 4 [or Exp5] no power supply.	Data Ribbon	Data out connector on the O/P module. J6 on C1633 and C1635	Connector J2 on O/P module 1[left hand most module]	Figure 12 [showing 2 x O/P modules]
			Aux DC power cable	"Power out" connector on the C1633/C1635 module. J3 on the C1633/J5 on the C1635.	"Power in" connector on the first C1633/C1635 module [from the left hand side of the expansion panel]. J4 on the C1633/J3 on the C1635.	
Precept[en] 16 Exp	2	Exp 4 [or Exp5] no power supply.	Data Ribbon	Data out connector on the last C1633/C1635 [right-hand-most] module . J6 on C1633 and C1635.	Connector J2 on O/P module 1[left hand most module].	Figure 12
			Aux DC power cable	"Power out" connector on the last C1633/C1635 [right-hand-most] module J3 on the C1633/J5 on the C1635.	"Power in" connector on the first C1633/C1635 module [from the left hand side of the expansion panel]. J4 on the C1633/J3 on the C1635.	
Precept[en] 8 with a single O/P module	1	Exp 4 [or Exp5] with power supply.	Data Ribbon	Data out connector on the O/P module. J6 on C1633 and C1635	Connector J2 on O/P module 1[left hand most module]	Figure 16
			Aux DC power cable		Factory fitted. From: C1652 power supply board 28V, 0V and fault signals from J1. To: "Power in" connector on the first C1633/C1635 module [from the left hand side of the expansion panel]. J4 on the C1633/J3 on the C1635.	

Fire Alarm Control Panel		Expansion Panel	Internal Connections			Schematic
Description	**Internal O/P Modules**	**Description**	**Internal Cable**	**In Precept[en] Panel**	**In Expansion Panel**	
Precept[en] 16 Exp	2	Exp 4 [or Exp5] with power supply.	Data Ribbon	Data out connector on the last C1633/C1635 [right-hand-most] module J6 on C1633 and C1635.	Connector J2 on O/P module 1[left hand most module].	Figure 16
			Aux DC power cable		Factory fitted. From: C1652 power supply board 28V, 0V and fault signals from J1. To: "Power in" connector on the first C1633/C1635 module [from the left hand side of the expansion panel]. J4 on the C1633/J3 on the C1635.	

6.2.4 Installation of the C1630 Output Expansion Interface

Warning: Observe anti-static precautions

1. Ensure that the panel is powered down and the main and standby supplies are disconnected.
2. On the fire alarm panel, remove the jumper link at J23 located in the upper right hand quarter of the C1627 motherboard and fit a C1630 output expansion interface to connectors J4 and J5 located below the fault routing relay. [J23 must be removed before the interface board can be fitted]. The board should be held in place by the 12mm high plastic spacer provided. See Figure 7 – C1627 Motherboard PCB Layout.
3. Connect the output expansion ribbon cable to header J17 located on the centre right hand edge of the C1627 motherboard as shown in Figure 7 – C1627 Motherboard PCB Layout.

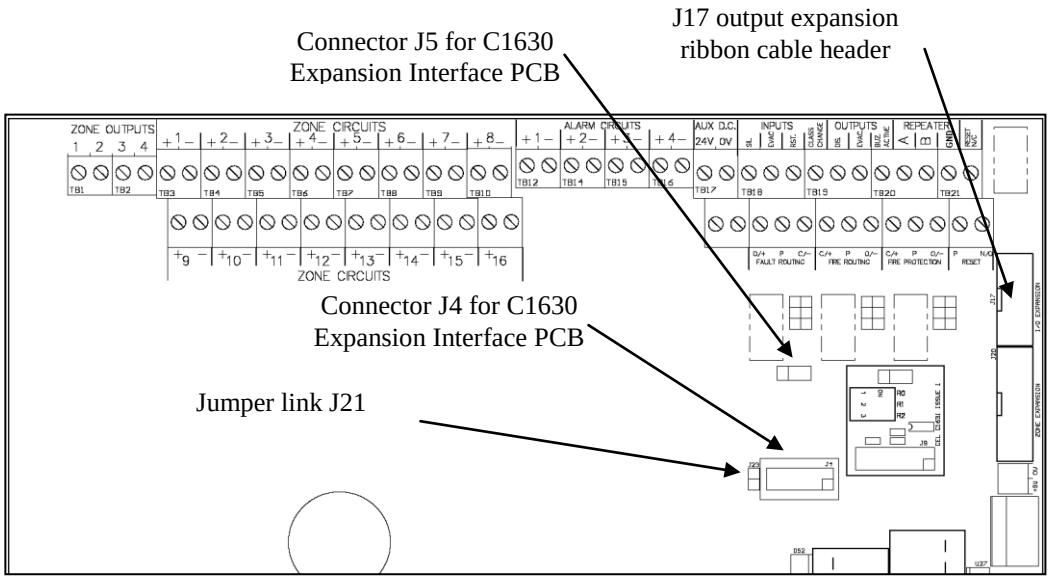


Figure 7 – C1627 Motherboard PCB Layout

7. Commissioning

The commissioning guidelines provided in the Precept[en] panel installation manual – Prec en inst. adequately cover the requirements for the output modules and should be read and understood before proceeding.

7.1 Site-Specific Configuration.

DIL switches are provided on the C1630 interface to set up the quantity of each type of output expansion module to be connected to the fire panel and on each output module to set the module address and configure its function.

7.1.1 C1633 8-way open collector output module configuration.

Table 3 - Setting C1633 Board Address

SW1		Function
AD0	**AD1**	**Board Address**
Off	Off	1
On	Off	2
Off	On	3
On	On	4

Table 4- Setting C1633 Zone Range

SW1			Function
Zonal	**ZN0**	**ZN1**	**O/P 1-8 zone range**
Off	Not functional	Not functional	All O/Ps operate on any zonal fire
On	Off	Off	Z 1-8
On	On	Off	Z9-16
On	Off	On	Z17- 24
On	On	On	Z25 -32

C1633 Connectors:
J1 – Programming header.
J2 – Comms to panel motherboard.
J3 – Power out.
J4 – Power in [from panel motherboard or aux PSU] + Aux PSU fault I/P.

C1633 Link Configuration:
J5 – Fit link to enable Aux PSU fault monitoring.

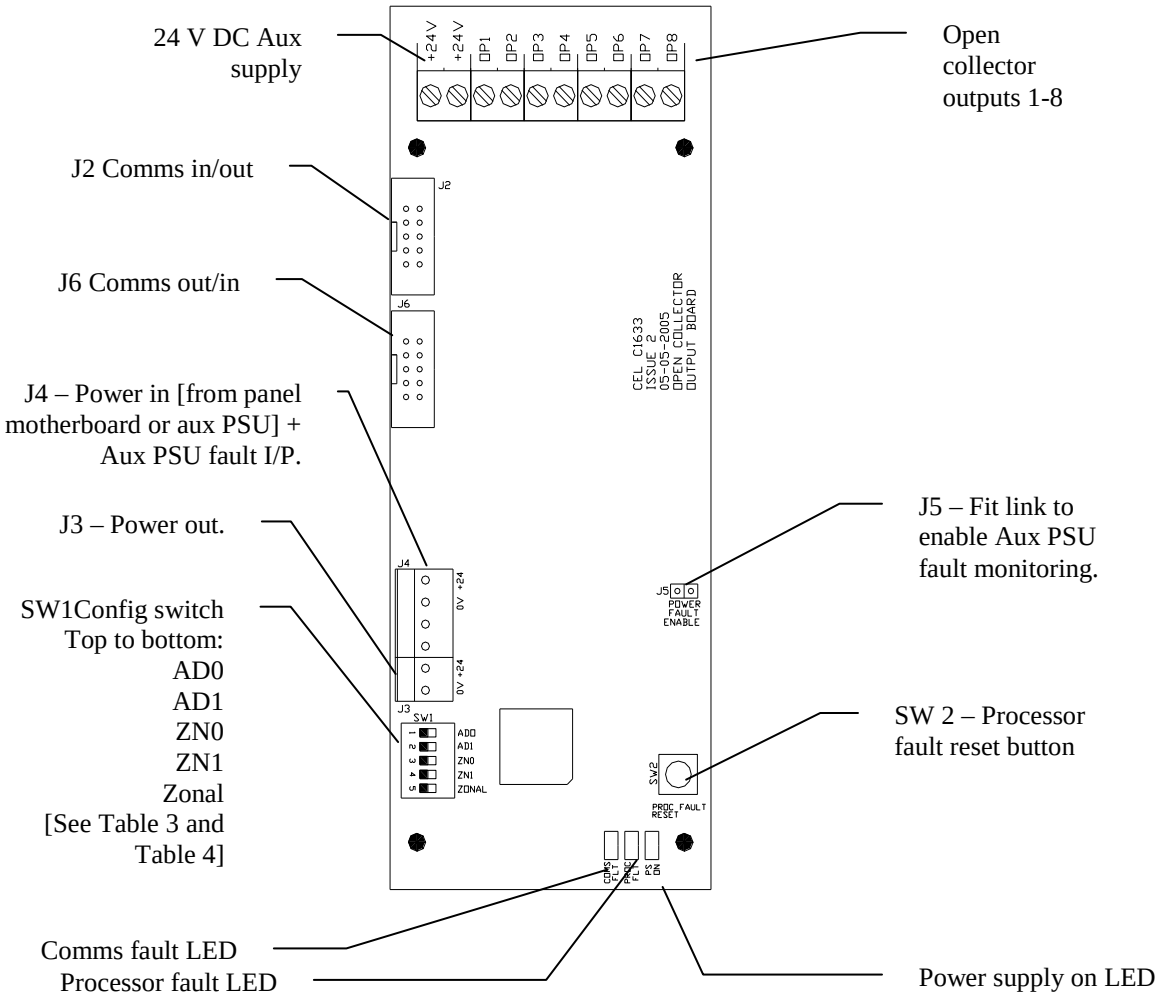


Figure 8 – C1633 PCB Layout

Table 5 - Setting C1634 Board Address

SW1		Function
AD0	**AD1**	**Board Address**
Off	Off	1
On	Off	2
Off	On	3
On	On	4

Table 6 - Setting C1634 Zone Range

SW1			Function
Zonal	**ZN0**	**ZN1**	**O/P 1-8 zone range**
Off	Not functional	Not functional	All O/Ps operate on any zonal fire
On	Off	Off	Z 1-8
On	On	Off	Z9-16
On	Off	On	Z17- 24
On	On	On	Z25 -32

Table 7 – Setting C1634 to Standard or VDR Mode

SW1	Function
Off	Fire Protection module
On	Voyage Data Recorder [Marine Panels only]

C1634 Connectors:
J1 – Programming header.
J2 – Comms and power from panel motherboard.

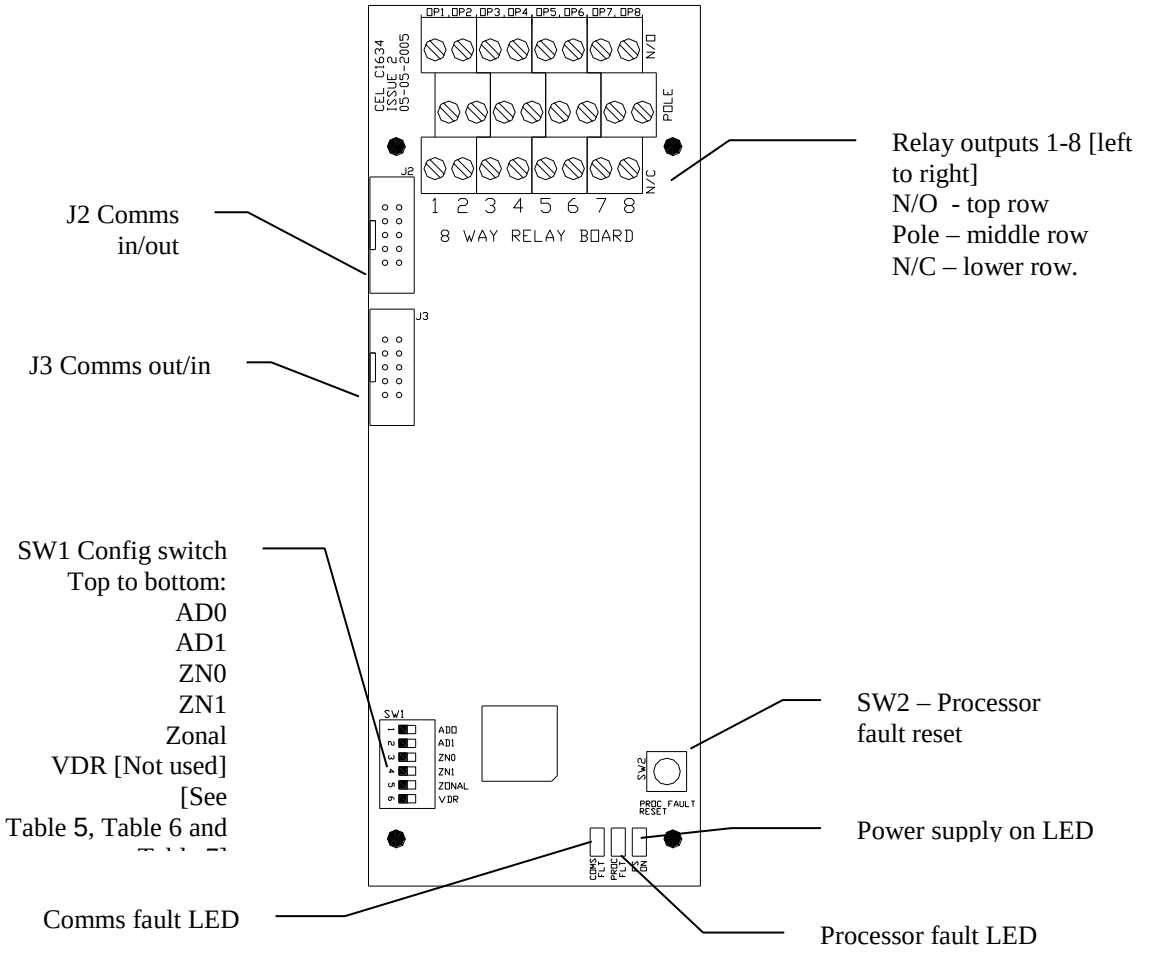


Figure 9 - C1634 PCB Layout

7.1.2 C1635 8-way alarm/powered – monitored relay output module configuration.

Table 8- Setting C1635 Board Address

SW1		Function
AD0	AD1	Board Address
Off	Off	1
On	Off	2
Off	On	3
On	On	4

C1635 Connectors:
J1 – Programming header.
J2 – Comms to panel motherboard.
J3 – Power in [from panel motherboard or aux PSU] + Aux PSU fault I/P.
J5 – Power out.

C1635 Link Configuration:
J4 – Fit link to enable Aux PSU fault monitoring.

Table 9 – Setting C1635 Type, General/Zonal Response and Zone range

SW1/6 [FP]	Mode	Panel Board SW2/6	SW1 Zonal	SW1 ZN0	SW1 ZN1	O/P 1-8 zone range
Off	SNDR	Off	N/A	N/A	N/A	General alarm (all O/Ps operate on any fire)
Off	SNDR	On	On	Off	Off	Z1-8
Off	SNDR	On	On	On	Off	Z9-16
Off	SNDR	On	On	Off	On	Z17- 24
Off	SNDR	On	On	On	On	Z25 -32
On	FP	N/A	Off	N/A	N/A	All O/Ps operate on any fire
On	FP	N/A	On	Off	Off	Z1-8
On	FP	N/A	On	On	Off	Z9-16
On	FP	N/A	On	Off	On	Z17- 24
On	FP	N/A	On	On	On	Z25 -32

Notes: SNDR = Sounders, FP = Fire Protection
When panel SW 2/6 is on:
If panel SW2-7 is off, non-alarm zones are silent.
If panel SW2-7 is on, non-alarm zones pulse [See Precept[en] panel manuals]

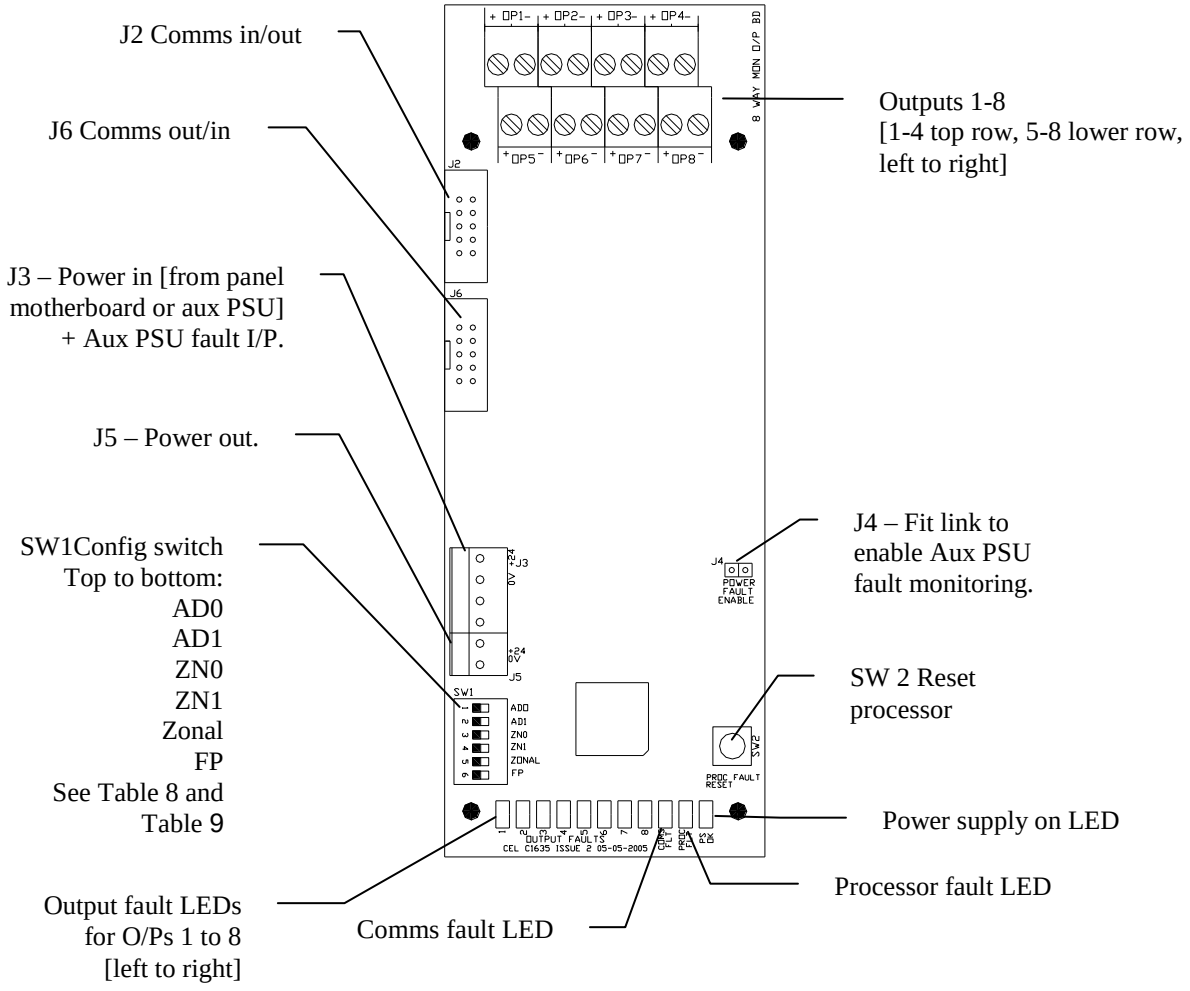

J2 Comms in/out
J6 Comms out/in
J3 – Power in [from panel motherboard or aux PSU] + Aux PSU fault I/P.
J5 – Power out.
SW1Config switch Top to bottom: AD0 AD1 ZN0 ZN1 Zonal FP See Table 8 and Table 9
Output fault LEDs for O/Ps 1 to 8 [left to right]
Comms fault LED
Outputs 1-8 [1-4 top row, 5-8 lower row, left to right]
J4 – Fit link to enable Aux PSU fault monitoring.
SW 2 Reset processor
Power supply on LED
Processor fault LED

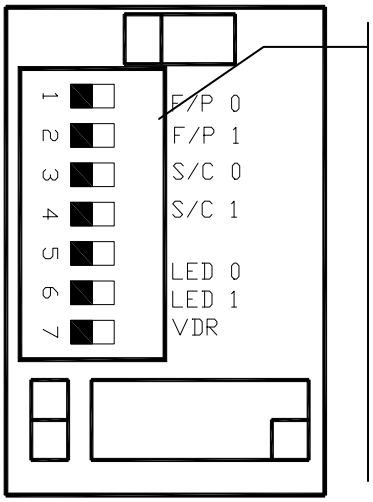
Figure 10 – C1635 PCB Layout

7.1.3 C1630 Output Interface Configuration

Table 10 – Setting Quantity and Type of O/P Modules on the C1630

DIL Switch setting		Number of boards	Type of board
F/P0	**F/P1**		C1634 or C1635 configured to FP [Fire protection Output]. See C1635 configuration details.
Off	Off	0	
On	Off	1	
Off	On	2	
On	On	4	
S/C0	**S/C1**		C1635 configured as sounder module. See C1635 configuration details.
Off	Off	0	
On	Off	1	
Off	On	2	
On	On	4	
LED0	**LED1**		C1633 open collector output module
Off	Off	0	
On	Off	1	
Off	On	2	
On	On	4	
VDR			Not used on Precept[en]
Off	-	0	
On	-	1	

[Note: Select switch to left hand side for OFF and right-hand side for ON]



Configuration switch to set qty and type of O/P modules connected
From top to bottom:
F/P0
F/P1
S/C0
S/C1
LED0
LED1
VDR [Not used]
[See Table 10]

Figure 11 – C1630 output expansion interface PCB

7.2 Commissioning Procedure

After completion of the pre-commissioning wiring check, power-up and configuration, commission the circuits in line with the following guide.

7.2.1 Sounder Circuits

1. Remove the resistor from the first alarm circuit terminal and connect the first alarm circuit wiring to the terminals, observing correct polarity. Check that any alarm fault indications clear after a few seconds.
2. Use the Alarm Test facility [see Precept[en] User Manual] or press Evacuate to operate the sounders. Check that all sounders connected to the alarm circuit operate.
3. Deselect the Alarms Test condition or if "Evacuate" was used, press silence alarms to stop the sounders operating.
4. Repeat steps 1 to 3 for the second and any subsequent sounder circuits.

7.2.2 Commissioning powered/fault monitored Fire Protection control signals [C1635 modules configured as Fire Protection O/Ps]

1. Ensure any fire protection equipment to be controlled via the Fire Protection output is locked off/safe before attempting any connection, testing or commissioning.
2. Remove the resistor from the C1635 output circuit terminal and connect the field wiring to the terminals, observing correct polarity. Check that any fault indications clear after a few seconds.
3. Initiate a fire condition on a zone to operate the output. Check that the fire signal operates the remote interface relay adjacent the fire protection equipment.
4. Reset the panel and confirm that the remote interface relay deactivates.
5. Open-circuit the field wiring and confirm that the fire alarm panel indicates Fire Protection output fault.
6. Reconnect the cabling and confirm the faults clear.
7. Disable the Fire Protection Outputs via the Precept[en] panel [see Precept[en] Operating Instructions]. Initiate a fire condition on a zone to operate the output and check that the output does not operate. Reset the panel and re – enable the Fire Protection O/Ps after the test.
8. Final testing and commissioning of the loop through to the fire protection equipment, including test [simulated] activation of the equipment, should be carried out at the appropriate time in conjunction with the engineer responsible for the fire protection system.
9. Repeat steps 1 to 7 for the second and any subsequent fire protection signal outputs.

7.2.3 Commissioning the volt-free relay Fire Protection control signal [C1634 modules configured as Fire Protection O/Ps]

1. Ensure any fire protection equipment to be controlled via the Fire Protection output is locked off/safe before attempting any connection, testing or commissioning.
2. Connect the field wiring to the appropriate terminals [N/O, P, N/C]
3. Initiate a fire condition on a zone to operate the output. Use a test meter set to continuity or Ohms to confirm the correct relay contact condition can be measured at the remote end of the installation wiring adjacent the fire protection equipment to be controlled.
4. Reset the fire alarm panel and with the test meter, confirm that the relay contacts have retruned to the deactivated condition.
5. Disable the Fire Protection Outputs via the Precept[en] panel [see Precept[en] Operating Instructions]. Initiate a fire condition on a zone to operate the output and check that the output does not operate. Reset the panel and re –enable the Fire Protection O/Ps after the test.
6. Final testing and commissioning of the loop through to the fire protection equipment, including test [simulated] activation of the equipment, should be carried out at the appropriate time in conjunction with the engineer responsible for the fire protection system.
7. Repeat steps 1 to 6 for the second and any subsequent volt free relay fire protection signal outputs.

7.2.4 Commissioning C1633 open collector outputs

1. Connect the field signal wires and the common return to the appropriate terminals observing the correct polarity.
2. The correct operation of equipment connected to these outputs should be verified in turn by initiating a fire condition on each of the appropriate zones and observing the operation of the equipment connected to the outputs in the field.

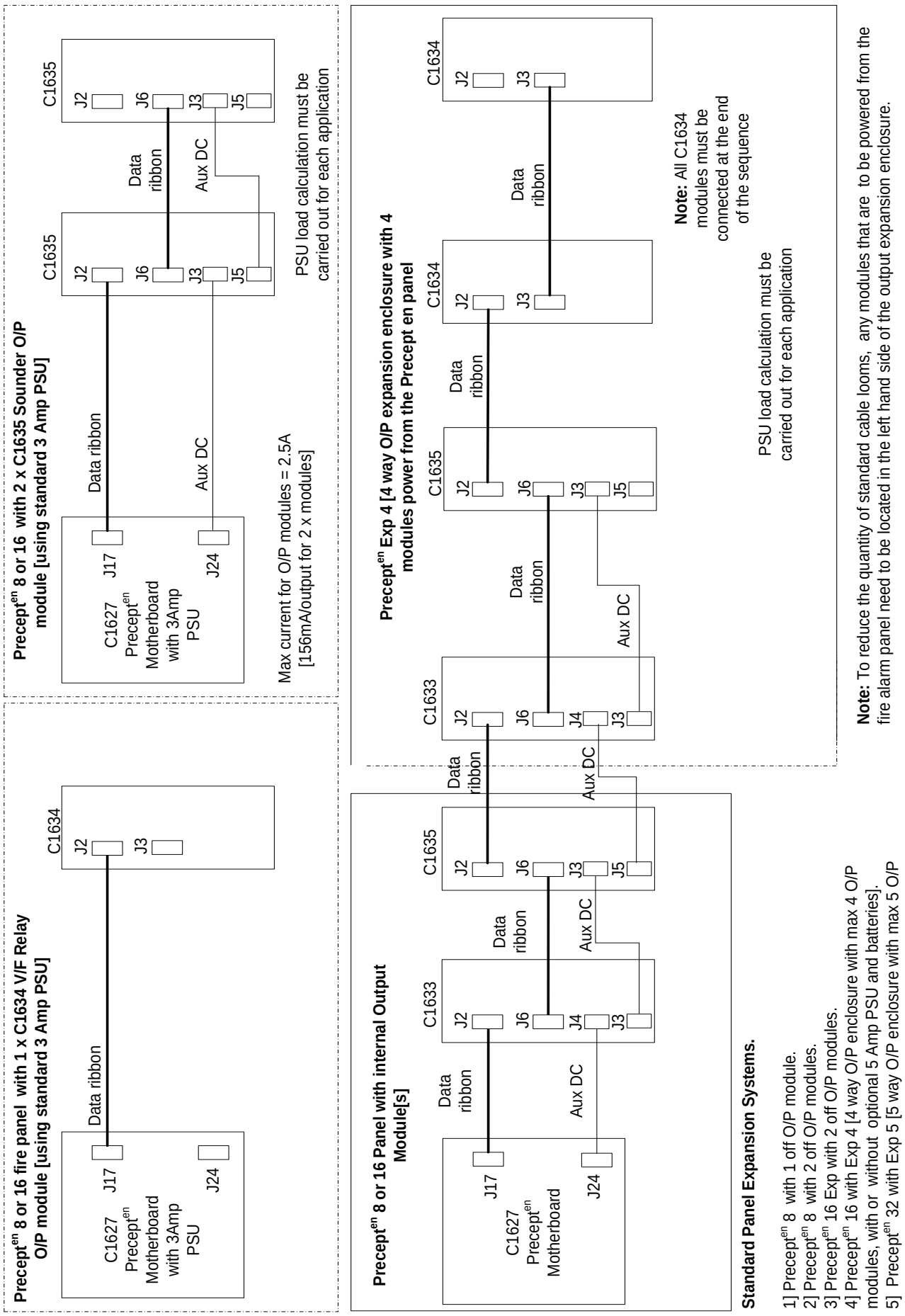

Precept[en] 8 or 16 with 2 x C1635 Sounder O/P module [using standard 3 Amp PSU]
C1635
J2
J6
J3
J5
Data ribbon
Aux DC
C1627 Precept[en] Motherboard with 3Amp PSU
J17
J24
Max current for O/P modules = 2.5A [156mA/output for 2 x modules]
PSU load calculation must be carried out for each application
Precept[en] 8 or 16 fire panel with 1 x C1634 V/F Relay O/P module [using standard 3 Amp PSU]
C1634
J2
J3
Precept[en] Exp 4 [4 way O/P expansion enclosure with 4 modules power from the Precept en panel
C1633
J4
Note: All C1634 modules must be connected at the end of the sequence
Precept[en] 8 or 16 Panel with internal Output Module[s]
Standard Panel Expansion Systems.
Note: To reduce the quantity of standard cable looms, any modules that are to be powered from the fire alarm panel need to be located in the left hand side of the output expansion enclosure.
1] Precept[en] 8 with 1 off O/P module.
2] Precept[en] 8 with 2 off O/P modules.
3] Precept[en] 16 Exp with 2 off O/P modules.
4] Precept[en] 16 with Exp 4 [4 way O/P enclosure with max 4 O/P modules, with or without optional 5 Amp PSU and batteries].
5] Precept[en] 32 with Exp 5 [5 way O/P enclosure with max 5 O/P modules, with or without optional 5 Amp PSU and batteries].

Figure 12 – Typical internal wiring diagram for Precept[en] 8/16 with internal O/P Modules and Exp 4 Output Module Panel with no PSU

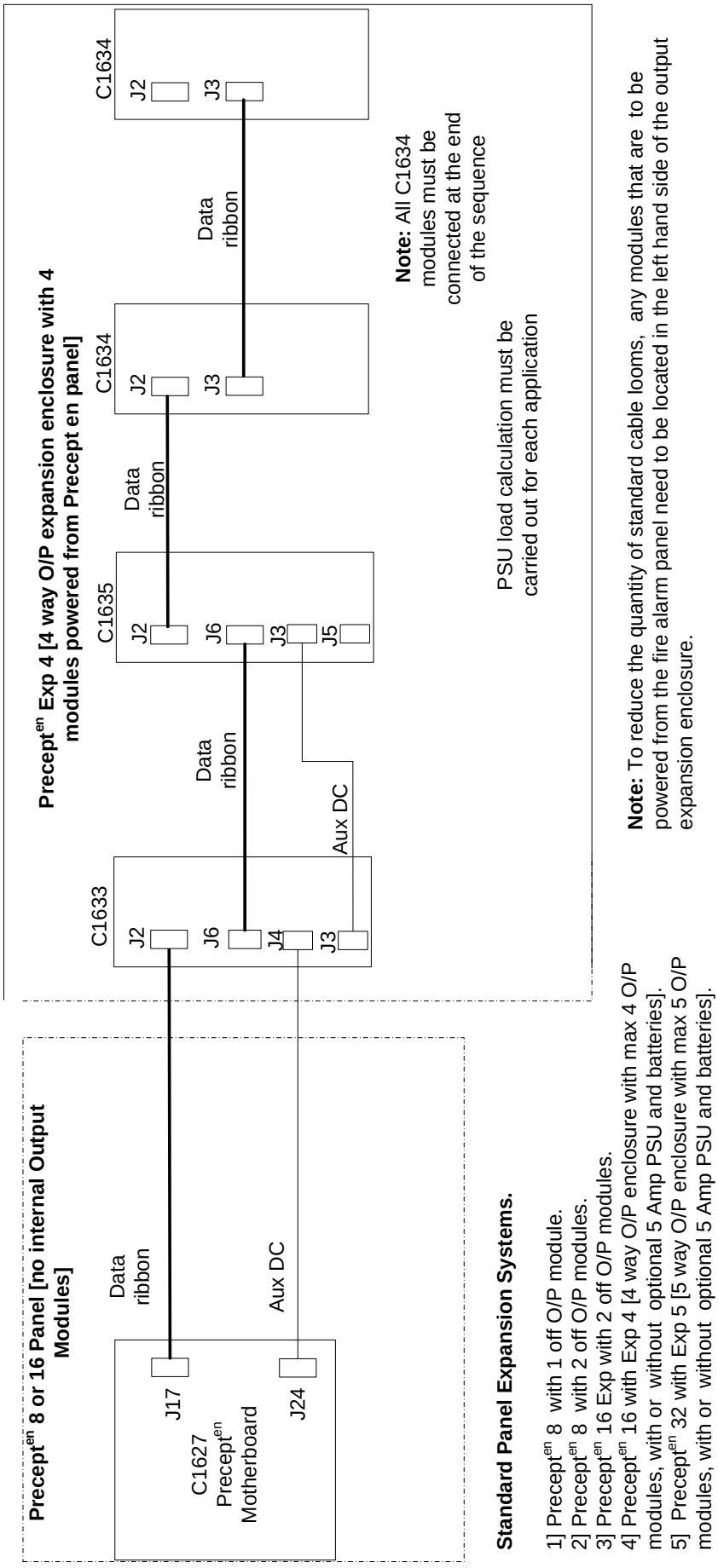

Precept[en] 8 or 16 Panel [no internal Output Modules]
Data ribbon
Aux DC
C1627 Precept[en] Motherboard
J17
J24
C1633
J2
J6
J4
J3
Aux DC
Data ribbon
C1635
J2
J6
J3
J5
Data ribbon
C1634
J2
J3
Data ribbon
C1634
J2
J3
Precept[en] Exp 4 [4 way O/P expansion enclosure with 4 modules powered from Precept en panel]
Note: All C1634 modules must be connected at the end of the sequence
PSU load calculation must be carried out for each application
Note: To reduce the quantity of standard cable looms, any modules that are to be powered from the fire alarm panel need to be located in the left hand side of the output expansion enclosure.
Standard Panel Expansion Systems.
1] Precept[en] 8 with 1 off O/P module.
2] Precept[en] 8 with 2 off O/P modules.
3] Precept[en] 16 Exp with 2 off O/P modules.
4] Precept[en] 16 with Exp 4 [4 way O/P enclosure with max 4 O/P modules, with or without optional 5 Amp PSU and batteries].
5] Precept[en] 32 with Exp 5 [5 way O/P enclosure with max 5 O/P modules, with or without optional 5 Amp PSU and batteries].

Figure 13 – Typical internal wiring diagram for Precept[en] 8/16 and Exp 4 Output Module Panel with no PSU

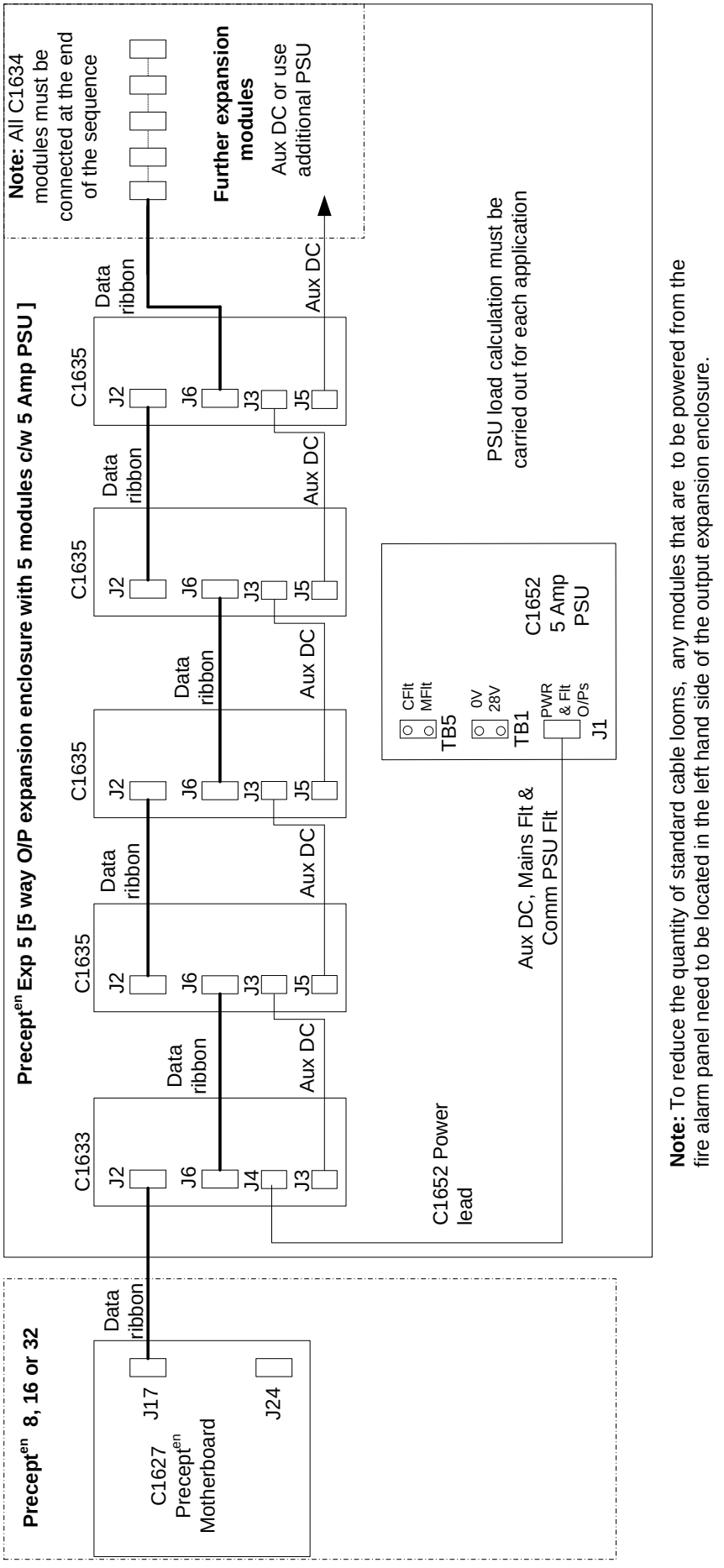

Precept[en] 8, 16 or 32
C1627 Precept[en] Motherboard
J17
J24
Data ribbon
Precept[en] Exp 5 [5 way O/P expansion enclosure with 5 modules c/w 5 Amp PSU]
C1633
C1635
J2
J6
J4
J3
J5
Aux DC
Data ribbon
Note: All C1634 modules must be connected at the end of the sequence
Further expansion modules
Aux DC or use additional PSU
PSU load calculation must be carried out for each application
C1652 5 Amp PSU
TB5
CFlt
MFlt
TB1
0V
28V
J1
PWR & Flt O/Ps
Aux DC, Mains Flt & Comm PSU Flt
C1652 Power lead
Note: To reduce the quantity of standard cable looms, any modules that are to be powered from the fire alarm panel need to be located in the left hand side of the output expansion enclosure.

Figure 14 – Typical internal wiring diagram for Precept[en] 32 and Exp 5 Output Module Panel with 5 Amp PSU

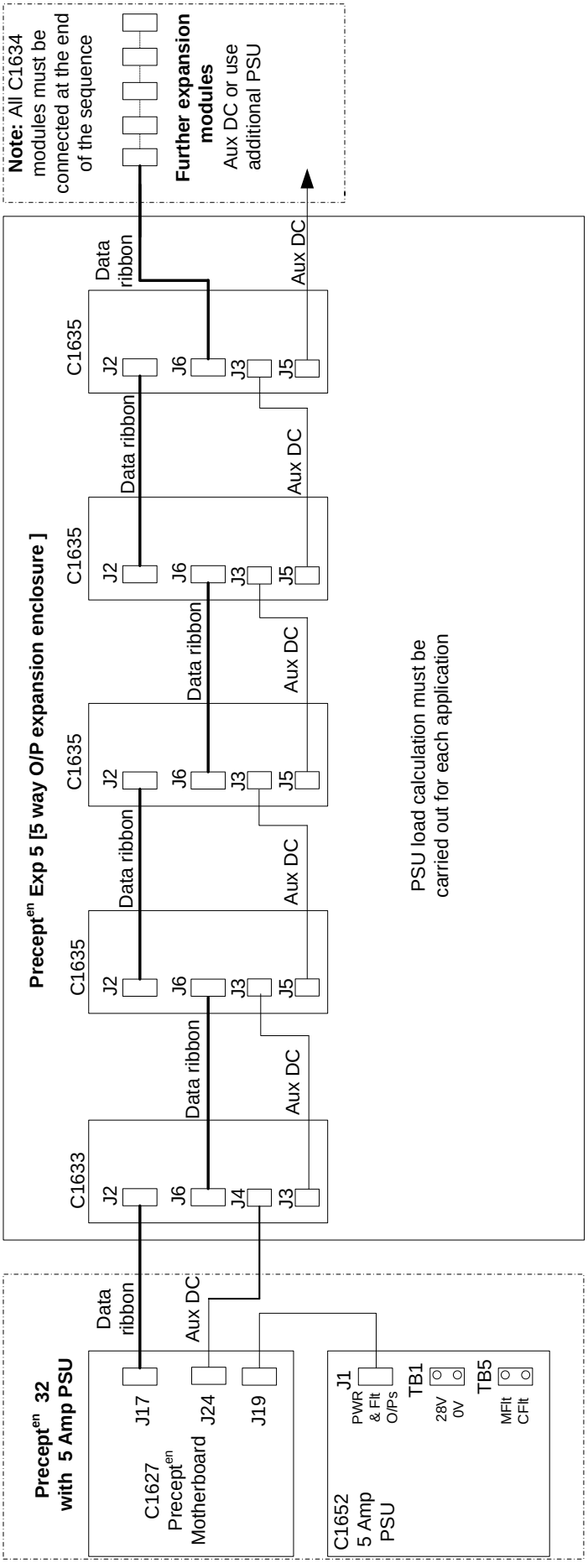


Figure 15 – Typical internal wiring diagram for Precept[en] 32 and Exp 5 Output Module Panel with no PSU

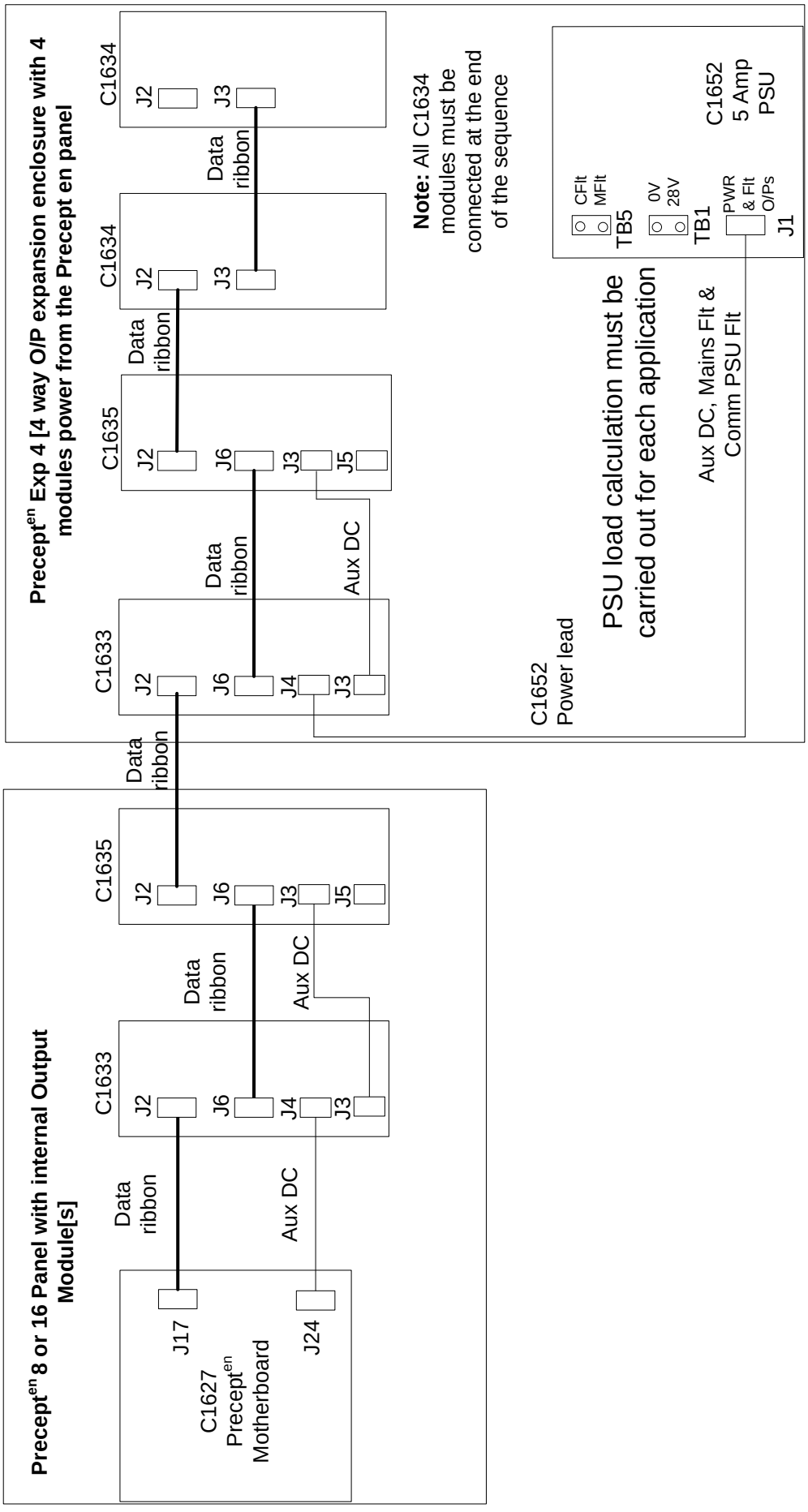
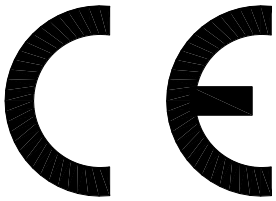


Figure 16 – Typical internal wiring diagram for Precept^en 8/16 with internal O/P Modules and Exp 4 Output Module Panel with PSU

8. Construction Products Directive



0086

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DY2 9AP
United Kingdom.

09
0086-CPD-555921

EN54-2
Control and indicating equipment for fire detection and fire alarm systems for buildings

Provided options:

- Outputs to fire alarm devices.
- Outputs to Fire Protection Equipment – Output type B
- Test condition.
- Delays to Outputs

EN54-4
Power supply equipment for fire detection and fire alarm systems for buildings